

October 16, 2015

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: Project: NPDES Data Gaps
Pace Project No.: 1254577

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on October 02, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Heather R Zika
heather.zika@pacelabs.com
Project Manager

Enclosures

cc: Terri Sabetti, Northeast Technical



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES Data Gaps

Pace Project No.: 1254577

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

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SAMPLE SUMMARY

Project: NPDES Data Gaps

Pace Project No.: 1254577

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1254577001	SW001 Station 701	Water	10/02/15 11:00	10/02/15 12:30

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SAMPLE ANALYTE COUNT

Project: NPDES Data Gaps

Pace Project No.: 1254577

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1254577001	SW001 Station 701	EPA 200.7	MAR	5	PASI-V
		SM 2320B	CSD	1	PASI-V
		SM 2540C	BEM	1	PASI-V
		EPA 300.0	DMB	2	PASI-V

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ANALYTICAL RESULTS

Project: NPDES Data Gaps

Pace Project No.: 1254577

Sample: SW001 Station 701		Lab ID: 1254577001		Collected: 10/02/15 11:00		Received: 10/02/15 12:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium	35.9	mg/L	2.0	0.12	4	10/05/15 12:24	10/06/15 12:33	7440-70-2	
Magnesium	47.2	mg/L	2.0	0.27	4	10/05/15 12:24	10/06/15 12:33	7439-95-4	
Potassium	4.1	mg/L	2.0	0.29	4	10/05/15 12:24	10/06/15 12:33	7440-09-7	
Sodium	21.5	mg/L	2.0	0.53	4	10/05/15 12:24	10/06/15 12:33	7440-23-5	
Total Hardness	284	mg/L	13.2	1.4	4	10/05/15 12:24	10/06/15 12:33		
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity,Bicarbonate (CaCO3)	116	mg/L	5.0	0.48	1		10/06/15 14:48		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	437	mg/L	10.0	10.0	1		10/05/15 12:37		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	35.6	mg/L	2.0	1.0	2		10/13/15 00:50	16887-00-6	
Sulfate	121	mg/L	4.0	0.18	2		10/13/15 00:50	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES Data Gaps
Pace Project No.: 1254577

QC Batch:	MPRP/5934	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 MET
Associated Lab Samples:	1254577001		

METHOD BLANK: 254027 Matrix: Water
Associated Lab Samples: 1254577001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	10/06/15 11:13	
Magnesium	mg/L	ND	0.50	10/06/15 11:13	
Potassium	mg/L	ND	0.50	10/06/15 11:13	
Sodium	mg/L	ND	0.50	10/06/15 11:13	

LABORATORY CONTROL SAMPLE: 254028

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	50	51.7	103	85-115	
Magnesium	mg/L	50	50.6	101	85-115	
Potassium	mg/L	10	10.1	101	85-115	
Sodium	mg/L	20	19.7	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 254029 254030

Parameter	Units	1254464001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	806	50	50	859	855	106	98	70-130	0	20	
Magnesium	mg/L	1.2	50	50	49.2	49.6	96	97	70-130	1	20	
Potassium	mg/L	1.3	10	10	12.2	12.3	110	111	70-130	1	20	
Sodium	mg/L	518	20	20	541	535	113	87	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 254031 254032

Parameter	Units	1254386002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	40.4	50	50	90.9	91.8	101	103	70-130	1	20	
Magnesium	mg/L	15.0	50	50	65.4	65.6	101	101	70-130	0	20	
Potassium	mg/L	2.5	10	10	12.6	12.7	101	101	70-130	1	20	
Sodium	mg/L	4.1	20	20	23.7	23.8	98	99	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES Data Gaps

Pace Project No.: 1254577

QC Batch: WET/20588

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Associated Lab Samples: 1254577001

METHOD BLANK: 254431

Matrix: Water

Associated Lab Samples: 1254577001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	10/06/15 13:05	

SAMPLE DUPLICATE: 254433

Parameter	Units	1254635001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	115	119	3	20	

SAMPLE DUPLICATE: 254434

Parameter	Units	1254589003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity,Bicarbonate (CaCO3)	mg/L	808	805	0	20	

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QUALITY CONTROL DATA

Project: NPDES Data Gaps

Pace Project No.: 1254577

QC Batch: WET/20580

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 1254577001

METHOD BLANK: 254107

Matrix: Water

Associated Lab Samples: 1254577001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10/05/15 12:37	

LABORATORY CONTROL SAMPLE: 254108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	255	268	105	80-120	

SAMPLE DUPLICATE: 254109

Parameter	Units	1254505001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1300	1320	1	10	

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QUALITY CONTROL DATA

Project: NPDES Data Gaps

Pace Project No.: 1254577

QC Batch: WETA/14150

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1254577001

METHOD BLANK: 256753

Matrix: Water

Associated Lab Samples: 1254577001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	10/12/15 18:40	
Sulfate	mg/L	ND	2.0	10/12/15 18:40	

LABORATORY CONTROL SAMPLE: 256754

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.2	100	90-110	
Sulfate	mg/L	50	48.1	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 256755

256756

Parameter	Units	1254762001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	32.0	50	50	83.3	83.1	103	102	90-110	0	20	
Sulfate	mg/L	4.7	50	50	54.5	54.8	100	100	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 256757

256758

Parameter	Units	1254755001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	993	250	250	1250	1250	104	102	90-110	0	20	
Sulfate	mg/L	24.2	250	250	277	276	101	101	90-110	0	20	

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QUALIFIERS

Project: NPDES Data Gaps

Pace Project No.: 1254577

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES Data Gaps


Pace Project No.: 1254577

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1254577001	SW001 Station 701	EPA 200.7	MPRP/5934	EPA 200.7	ICP/4616
1254577001	SW001 Station 701	SM 2320B	WET/20588		
1254577001	SW001 Station 701	SM 2540C	WET/20580		
1254577001	SW001 Station 701	EPA 300.0	WETA/14150		

REPORT OF LABORATORY ANALYSIS

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	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #:

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number:



Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on Ice, cooling process has begun

Cooler Temp Read °C: 5.2 Cooler Temp Corrected °C: 5.5 Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A
 Temp should be above freezing to 6°C Correction Factor: 0.3 Date and Initials of Person Examining Contents: CK 10/2/15

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>W</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)